The Fiscal Consequences of Dropping Out of High School

A Department of Workforce Services Research Brief
By Michael Hanni, Labor Economist

This research brief outlines the results of an analysis conducted by the Utah Department of Workforce Services of Northeastern University's Center for Labor Market Studies' report entitled, "An Assessment of the Labor Market, Income, Health, Social and Fiscal Consequences of Dropping Out of High School". Specifically, as requested, we focus on the fiscal aspect of this report in our analysis.

Summary

- Economic theory suggests that those with higher education should realize higher wages, making them net-contributors to the government as opposed to net-consumers.
- It was not possible to completely replicate the Center for Labor Market's research because of a lack of cooperation on their part.
- Estimates of the fiscal incidence of dropping out of high school were generated for the state of Utah and the nation using a methodology developed by the Department of Workforce Services. These estimates are suggestive of the trends seen in national data, but are unreliable because of a severe lack of observations in the Utah data.

Theoretical Underpinning

It has long been recognized by labor economists that their exists a correlation between educational attainment and income. This relationship is detailed in a large corpus of work that goes under the name of human capital development. In essence, it is posited that those with higher levels of education, and thus refined skills, are more productive in the workplace and therefore can command higher wages. These higher wages in turn lead to higher income and also higher levels of taxes paid. It is this linkage that the original study wishes to examine in its analysis.

Research Background

The original study from Northeastern University's Center for Labor Market Studies outlines the difference in total federal and state income and payroll taxes paid with transfer payments from the government received by individuals at different levels of educational attainment. Namely, the study focused on non-enrolled individuals, ages 16 to 64, who either dropped out of high school, had a high school diploma or GED, had some college education, and those with a bachelor's degree or higher. Their findings show that there appears to be a correlation between the level of education obtained and the net-demand on government services.

To obtain these figures the researchers turned to the March Supplement to the Current Population Survey that is conducted by the U.S. Census Bureau. An enlarged sample in

this month and the addition of a slate of supplementary questions makes this monthly supplement an important source of economic and demographic data of the population of the United States of America. Unfortunately for our purposes, the original report went into very little detail about the mechanics of variable selection and the creation of their estimates. While they outline, briefly, what they consider cash and non-cash government transfers and the population they are trying to limit their analysis to, it is difficult to say for sure what their exact process entailed. Because of this, our analysis is different for a number of reasons.

Since the original report did not detail the variables selected—and the report authors would not respond to repeated requests for clarification—our analysis had to select the variables of interest from scratch. While many of the variables follow exactly from what was alluded to in the text of the original report, the list of variables for cash transfers was found to be wanting. The U.S. Census Bureau defines government cash transfer payments as the sum of: unemployment compensation, state workers' compensation, social security, Supplemental Security Income (SSI), public assistance, veterans' benefits, government survivor benefits, government disability benefits, government pensions, and government educational assistance.[1] This definition is slightly broader than that of the original report and was felt to give a more complete picture so it was used in our analysis.

There was also some confusion in the original study as to the difference between personal, family, and household variables. In the CPS, data is collected for people, which are then grouped together with their immediate family, which in turn is aggregated with other families who live together in a single household. Thus, it is important to note exactly which layer of data we are looking at and modify that data so it is relevant for the unit of observation we are interested in: the individual. For example, the original research makes use of a household-level variable, energy assistance from government sources, in its calculation. However, in their analysis they apply the household's entire value to each member of the household, in essence multiplying the amount of actual transfer payments in the analysis. In this research brief we have corrected for this by dividing the value of family and household variables by the number of family or household members.

Findings

In processing the 2007 March Supplement data of the Current Population Survey using our own methodology, we were able to obtain results that were largely in line with the findings of the original report by the Center for Labor Market Studies. We found that the 2007 data, which values are for calendar year 2006, showed that there indeed appeared to be a correlation between higher levels of educational attainment and the net-cost to the government for services rendered to individuals.

[1] U.S. Census Bureau, http://www.census.gov/population/www/cps/cpsdef.html

Table 1. Estimates of Annual Taxes Paid Versus Government Transfer Payments

	Taxes Paid	Cash Transfers	Non-cash Benefits	Total Transfers	Net-cost
Utah					
<12 or 12 and no diploma	$2,331	$850	$1,659	$2,509	-$178
HS graduate or GED	$5,215	$754	$1,097	$1,851	$3,364
1-3 years of college	$6,936	$950	$1,024	$1,974	$4,962
Bachelor's degree	$11,376	$1,057	$682	$1,739	$9,637
Master's degree or higher	$16,917	$1,450	$929	$2,379	$14,538
Total	$7,532	$938	$1,041	$1,979	$5,553
United States					
<12 or 12 and no diploma	$2,561	$1,606	$2,999	$4,605	-$2,044
HS graduate or GED	$5,234	$1,457	$1,771	$3,228	$2,006
1-3 years of college	$7,542	$1,463	$1,297	$2,760	$4,782
Bachelor's degree	$13,109	$1,185	$672	$1,857	$11,252
Master's degree or higher	$19,313	$1,806	$480	$2,286	$17,027
Total	$8,365	$1,458	$1,469	$2,927	$5,438

Note: Non-enrolled individuals, ages 16 to 64.
Source: Utah Department of Workforce Services, Author's calculations based on data from 2007 March Supplement CPS data.

As Table 1 shows, Utah and the United States share a similar distribution of net-costs by educational attainment of individuals. However, whereas nationally individuals who have dropped out of high school average a net-difference in taxes versus payments of -$2,044, in Utah that figure is only -$178. This is a significant difference and it unfortunately lacks explanation. An examination of the underlying transfer payment variables shows that there are several that show no value for Utah, while for the nation they do. This suggests that that the data for the state is too scarce to derive useful estimates.

In fact, our analysis revealed the number of useable observations for the state of Utah was very low. Whereas the entire sample for the nation contains thousands of observations and therefore can generate relatively reliable estimates, for Utah the number plummets. In fact, in our analysis some cells only had slightly more than one hundred observations. The end result of this is that the estimates generated for Utah are subject to massive confidence intervals and could be considered bordering on statistical insignificance. For this reason, it is important that these numbers be viewed as providing a general idea of magnitudes, but not as absolute estimates of money flows.

Conclusion

Economic theory suggests that individuals with increasingly higher levels of educational attainment should realize ever-higher returns commensurate with their investment in their own human capital. These higher returns allow those who have more education to be more productive, demand higher wages, and generally enjoy a greater quality of life. Investment in human capital creates a multitude of positive personal and social externalities—think greater self-reliance, lower crime, a healthier population, etc.—which fosters economic development and growth.

Largely in line with economic theory, and the previous research by the Center for Labor Market Studies, our analysis shows that there indeed appears to be a correlation between educational attainment and the net-cost of an individual to the government. People who have dropped out of high school often face reduced earnings potential and therefore pay less in taxes. In turn, their lower incomes often force them to be prominent consumers of particular government social programs. However, individuals in other educational attainment levels are also prominent consumers of government services. While the dollar amount of the transfer payments they receive is slightly lower, their higher income and thus higher tax payments make them net-contributors to the system as opposed to net-consumers.

It must be pointed out that there is an important difference in marginal versus average outcomes for individuals that this analysis doesn't show. That is, while a given educational attainment level is associated with an average level of taxes paid and government transfers consumed, any given individual may not experience the same change in outcomes with additional education attainment. There are often multiple barriers that must be overcome by individuals who have dropped out of school. Sometimes their lack of formal education is the least of these issues in shaping their personal outcomes. Thus, while a correlation appears to hold between education and net-cost to the government, taking an inventory of the entire set of barriers faced by individuals who have dropped out of high school is an important step in reinforcing the gains additional education affords.